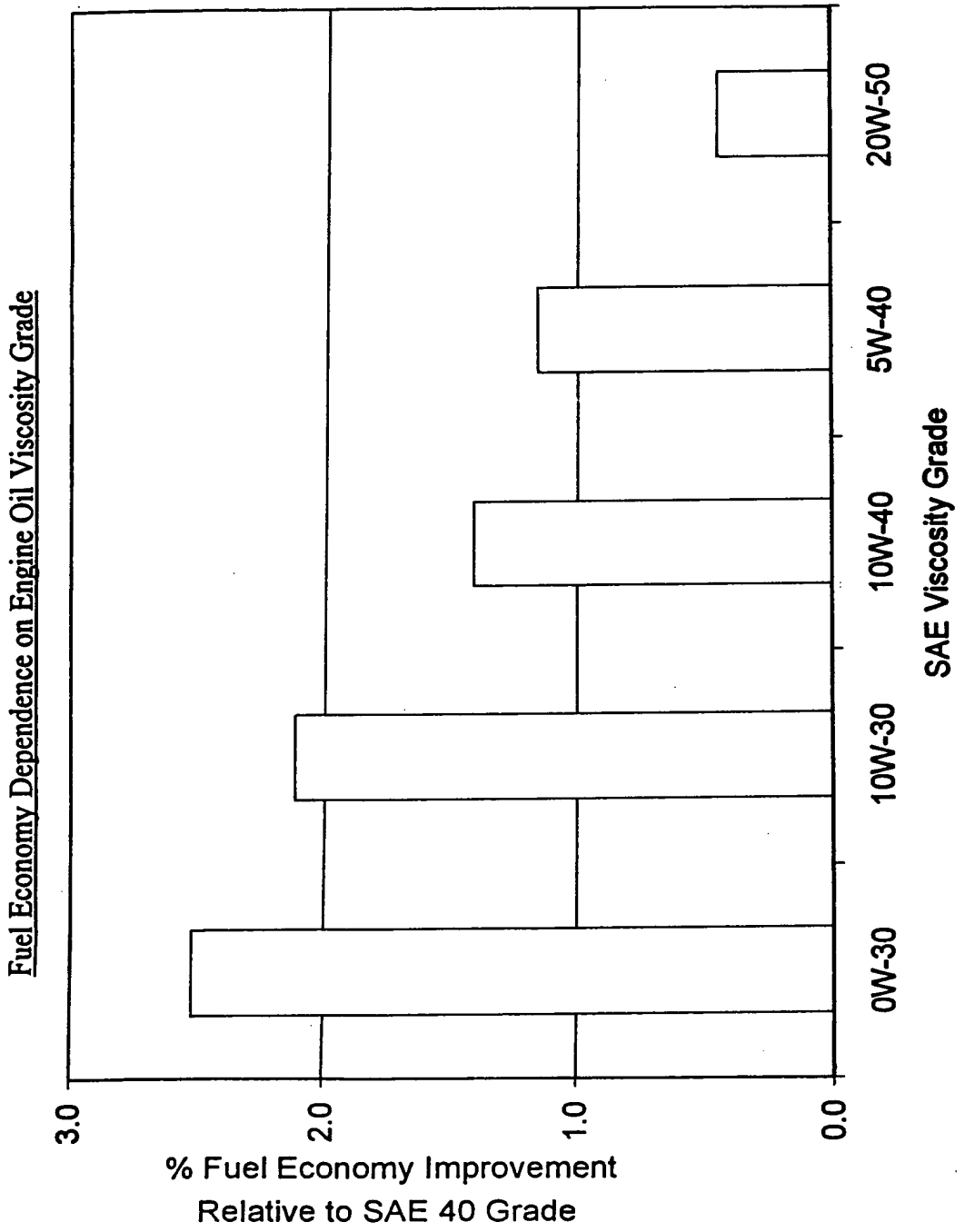
Fuel Economy Dependence on Engine Oil Viscosity Grade
0W-30
10W-30
10W-40
5W-40
20W-50
SAE Viscosity Grade
3.0
2.0
1.0
0.0
% Fuel Economy Improvement
Relative to SAE 40 Grade

FIG. 1

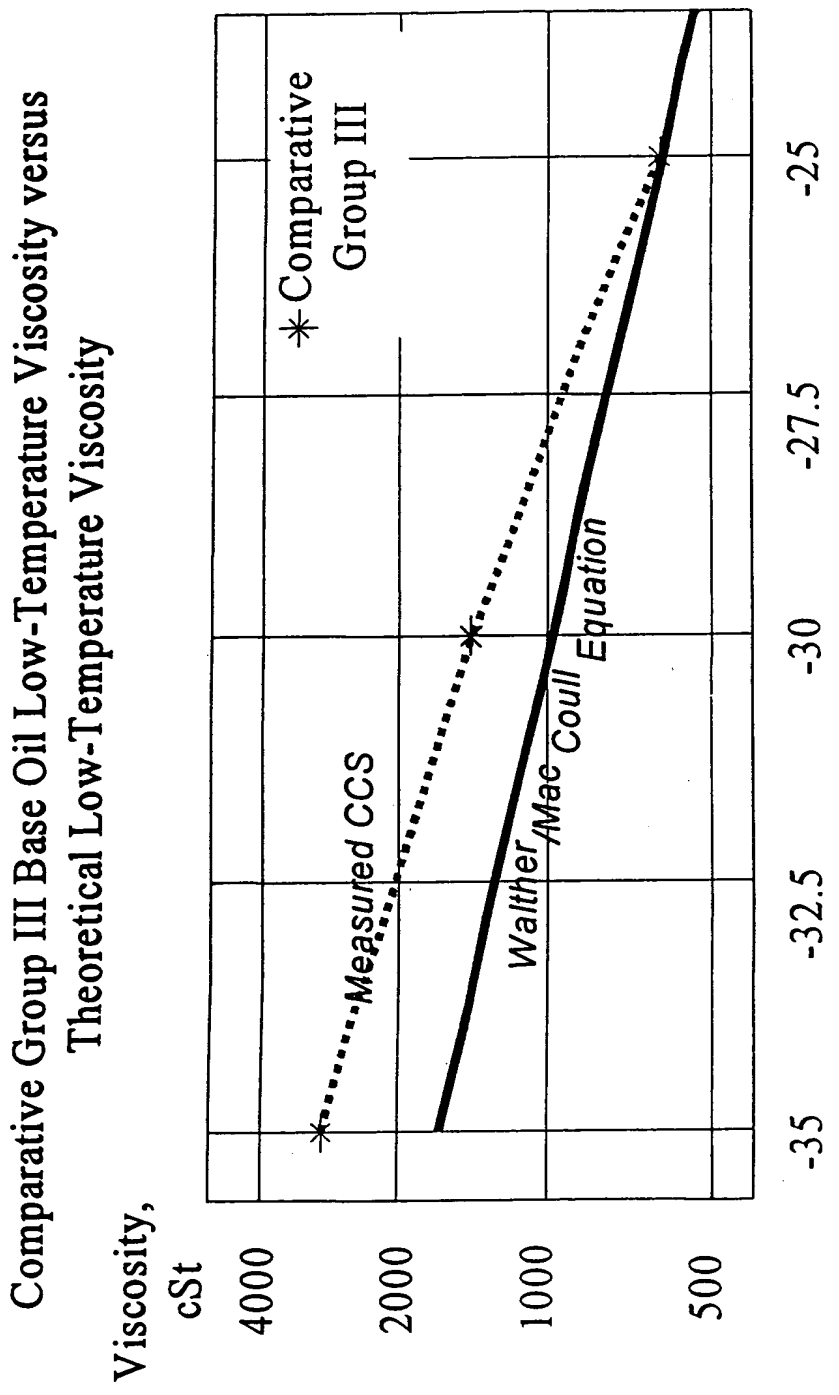
Comparative Group III Base Oil Low-Temperature Viscosity versus Theoretical Low-Temperature Viscosity
Viscosity, cSt
4000
2000
1000
500
-35
-32.5
-30
-27.5
-25
Temperature, °C
Comparative Group III
Measured CCS
Walther/Mae Coull Equation

FIG. 2

NLF-0320, Kim Elizabeth Fyfe, et al., "High Viscosity-Index Base Stocks, Base Oils and Lubricant Compositions and Methods for Their Production and Use"

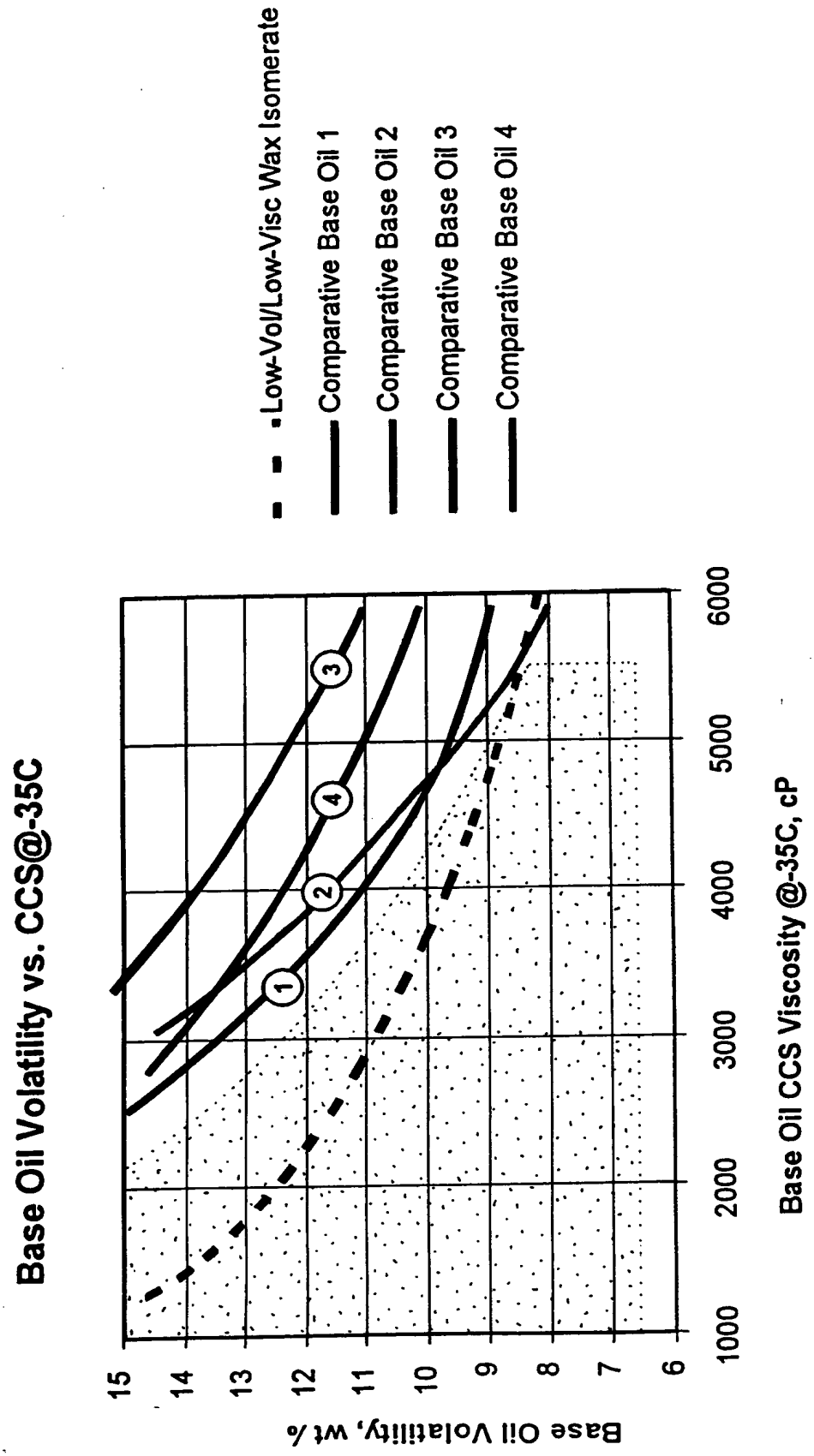

FIG. 3

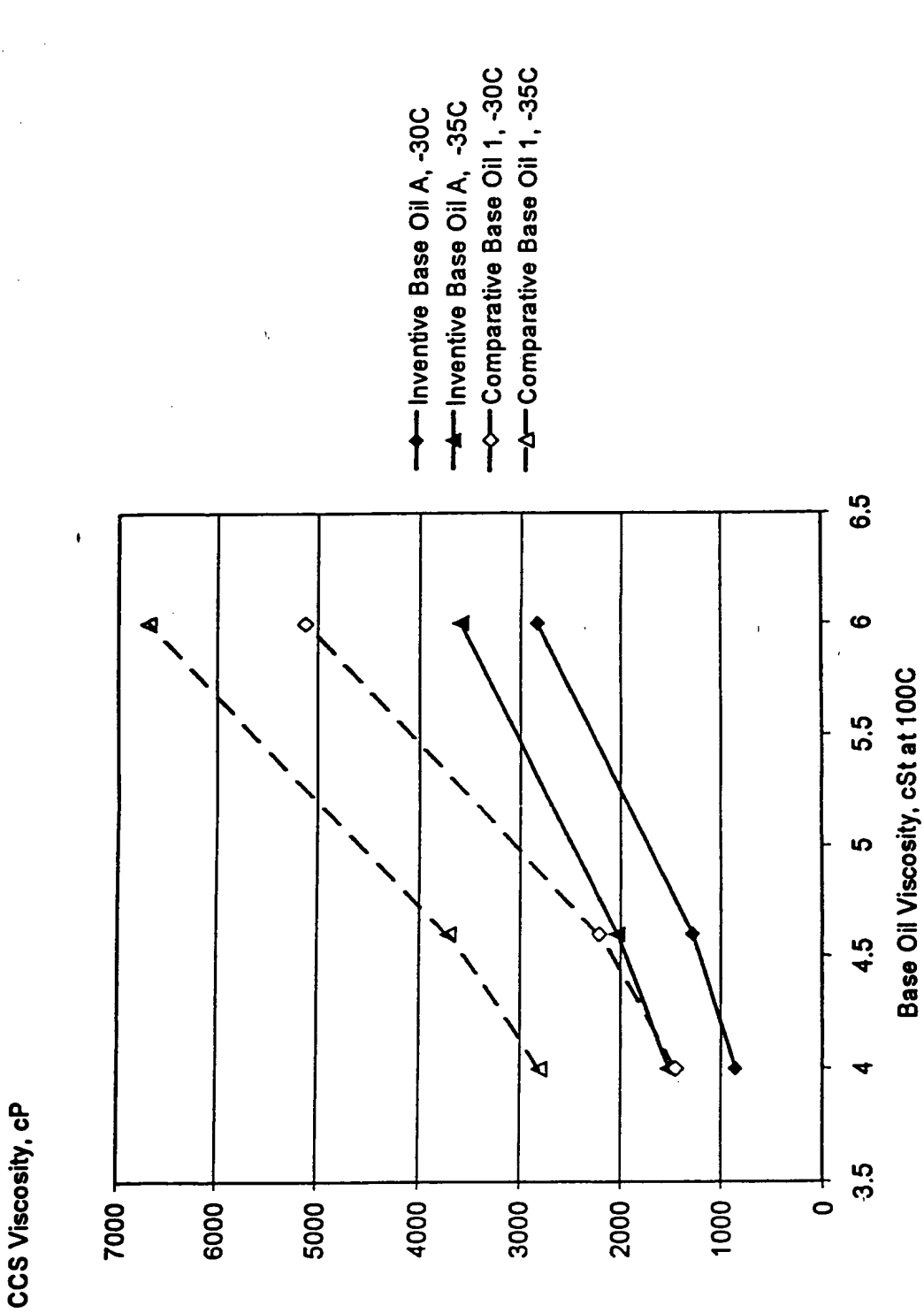
Base Oil CCS Low-Temperature Viscosity at Comparable Kinematic Viscosity
CCS Viscosity, cP
7000
6000
5000
4000
3000
2000
1000
0
3.5
4
4.5
5
5.5
6
6.5
Base Oil Viscosity, cSt at 100C
Inventive Base Oil A, -30C
Inventive Base Oil A, -35C
Comparative Base Oil 1, -30C
Comparative Base Oil 1, -35C

FIG. 4